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 NEWS  3  SEP 09   CA/CAplus records now contain indexing from 1907 to the
                   present
 NEWS  4  DEC 08   INPADOC: Legal Status data reloaded
 NEWS  5  SEP 29   DISSABS now available on STN
 NEWS  6  OCT 10   PCTFULL: Two new display fields added
 NEWS  7  OCT 21   BIOSIS file reloaded and enhanced
 NEWS  8  OCT 28   BIOSIS file segment of TOXCENTER reloaded and enhanced
 NEWS  9  NOV 24   MSDS-CCOHS file reloaded
 NEWS 10  DEC 08   CABA reloaded with left truncation
 NEWS 11  DEC 08   IMS file names changed
 NEWS 12  DEC 09   Experimental property data collected by CAS now available
                   in REGISTRY
 NEWS 13  DEC 09   STN Entry Date available for display in REGISTRY and CA/CAplus
 NEWS 14  DEC 17   DGENE: Two new display fields added
 NEWS 15  DEC 18   BIOTECHNO no longer updated
 NEWS 16  DEC 19   CROPU no longer updated; subscriber discount no longer
                   available
 NEWS 17  DEC 22   Additional INPI reactions and pre-1907 documents added to CAS
                   databases
 NEWS 18  DEC 22   IFIPAT/IFIUDB/IFICDB reloaded with new data and search fields
 NEWS 19  DEC 22   ABI-INFORM now available on STN
 NEWS 20  JAN 27   Source of Registration (SR) information in REGISTRY updated
                   and searchable
 NEWS 21  JAN 27   A new search aid, the Company Name Thesaurus, available in
                   CA/CAplus

 NEWS EXPRESS  DECEMBER 28 CURRENT WINDOWS VERSION IS V7.00, CURRENT
               MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),
               AND CURRENT DISCOVER FILE IS DATED 23 SEPTEMBER 2003
 NEWS HOURS    STN Operating Hours Plus Help Desk Availability
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  * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * *
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FILE 'HOME' ENTERED AT 15:39:14 ON 02 FEB 2004

=> file medline, uspatful, dgene, embase, wpids, fsta, biosis
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FULL ESTIMATED COST 0.21 0.21

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=> s (holo-phycobiliprotein)
L1 2 (HOLO-PHYCOBILIPROTEIN)

=> d l1 ti abs ibib tot

L1 ANSWER 1 OF 2 USPATFULL on STN
TI Engineering of living cells for the expression of **holo-phycobiliprotein**-based constructs
AB Recombinant cells which express a fluorescent **holo-phycobiliprotein** fusion protein and methods of use are described. The cells comprises a bilin, a recombinant bilin reductase, an apo-phycobiliprotein fusion protein precursor of the fusion protein comprising a corresponding apo-phycobiliprotein domain, and a recombinant phycobiliprotein domain-bilin lyase, which components react to form the **holo-phycobiliprotein** fusion protein. Also described are **holo-phycobiliprotein** based transcription reporter cells and assays, which cells conditionally express a heterologous-to-the-cell, fluorescent, first **holo-phycobiliprotein** domain.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 2003:37640 USPATFULL
TITLE: Engineering of living cells for the expression of **holo-phycobiliprotein**-based constructs
INVENTOR(S): Glazer, Alexander N., Berkeley, CA, UNITED STATES
Tooley, Aaron J., Berkeley, CA, UNITED STATES
Cai, Yuping, Carmel, IN, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003027285	A1	20030206
APPLICATION INFO.:	US 2001-919486	A1	20010731 (9)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: RICHARD ARON OSMAN, SCIENCE AND TECHNOLOGY LAW GROUP, 75 DENISE DRIVE, HILLSBOROUGH, CA, 94010

NUMBER OF CLAIMS: 24
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 918
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 2 OF 2 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
TI New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first **holo-phycobiliprotein** domain fused a heterologous protein domain, useful for expressing a **holo-phycobiliprotein** fusion protein.
AN 2003-466144 [44] WPIDS
AB US2003027285 A UPAB: 20030710
NOVELTY - A recombinant cell expressing a **holo-phycobiliprotein** fusion protein comprising a heterologous-to-the-cell, fluorescent, first **holo-phycobiliprotein** domain fused a heterologous protein domain, is new.
DETAILED DESCRIPTION - A recombinant cell expressing a **holo-phycobiliprotein** fusion protein comprising a heterologous-to-the-cell, fluorescent, first **holo-phycobiliprotein** domain fused a heterologous protein domain. The cell makes and comprises components such as a bilin, a recombinant bilin reductase, an apo-phycobiliprotein fusion protein precursor of the fusion protein comprising a corresponding apo-phycobiliprotein domain, and a recombinant phycobiliprotein domain-bilin lyase, which components react inside the cell to form the **holo-phycobiliprotein** fusion protein.
An INDEPENDENT CLAIM is also included for making a **holo-phycobiliprotein** fusion protein by growing the cell under conditions where the cell expresses the **holo-phycobiliprotein** fusion protein.
USE - The cells are useful for expressing **holo-phycobiliprotein**-based constructs, useful in enzymology and chemistry of phycobiliprotein synthesis. The phycobiliproteins are useful as in vivo fluorescent protein probes.
Dwg.0/3

ACCESSION NUMBER: 2003-466144 [44] WPIDS
DOC. NO. NON-CPI: N2003-370782
DOC. NO. CPI: C2003-124291
TITLE: New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first **holo-phycobiliprotein** domain fused a heterologous protein domain, useful for expressing a **holo-phycobiliprotein** fusion protein.
DERWENT CLASS: B04 D16 P13 S03
INVENTOR(S): CAI, Y; GLAZER, A N; TOOLEY, A J
PATENT ASSIGNEE(S): (CAIY-I) CAI Y; (GLAZ-I) GLAZER A N; (TOOL-I) TOOLEY A J; (REGC) UNIV CALIFORNIA
COUNTRY COUNT: 100
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2003027285	A1	20030206	(200344)*		13
WO 2003012448	A1	20030213	(200344)	EN	

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2003027285 A1		US 2001-919486	20010731
WO 2003012448 A1		WO 2002-US24245	20020730

PRIORITY APPLN. INFO: US 2001-919486 20010731

=> s (apo-phycobiliprotein)
L2 2 (APO-PHYCOBILIPROTEIN)

=> d l2 ti abs ibib tot

L2 ANSWER 1 OF 2 USPATFULL on STN
TI Engineering of living cells for the expression of holo-phycobiliprotein-based constructs
AB Recombinant cells which express a fluorescent holo-phycobiliprotein fusion protein and methods of use are described. The cells comprises a bilin, a recombinant bilin reductase, an **apo-phycobiliprotein** fusion protein precursor of the fusion protein comprising a corresponding **apo-phycobiliprotein** domain, and a recombinant phycobiliprotein domain-bilin lyase, which components react to form the holo-phycobiliprotein fusion protein. Also described are holo-phycobiliprotein based transcription reporter cells and assays, which cells conditionally express a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER:	2003:37640 USPATFULL		
TITLE:	Engineering of living cells for the expression of holo-phycobiliprotein-based constructs		
INVENTOR(S):	Glazer, Alexander N., Berkeley, CA, UNITED STATES Tooley, Aaron J., Berkeley, CA, UNITED STATES Cai, Yuping, Carmel, IN, UNITED STATES		
	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003027285	A1	20030206
APPLICATION INFO.:	US 2001-919486	A1	20010731 (9)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	RICHARD ARON OSMAN, SCIENCE AND TECHNOLOGY LAW GROUP, 75 DENISE DRIVE, HILLSBOROUGH, CA, 94010		
NUMBER OF CLAIMS:	24		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	3 Drawing Page(s)		
LINE COUNT:	918		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 2 OF 2 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
TI New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, useful for expressing a holo-phycobiliprotein fusion protein.
AN 2003-466144 [44] WPIDS
AB US2003027285 A UPAB: 20030710
NOVELTY - A recombinant cell expressing a holo-phycobiliprotein fusion protein comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, is new.
DETAILED DESCRIPTION - A recombinant cell expressing a holo-phycobiliprotein fusion protein comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain. The cell makes and comprises components such as a bilin, a recombinant bilin reductase, an **apo-phycobiliprotein**

fusion protein precursor of the fusion protein comprising a corresponding **apo-phycobiliprotein** domain, and a recombinant phycobiliprotein domain-bilin lyase, which components react inside the cell to form the holo-phycobiliprotein fusion protein.

An INDEPENDENT CLAIM is also included for making a holo-phycobiliprotein fusion protein by growing the cell under conditions where the cell expresses the holo-phycobiliprotein fusion protein.

USE - The cells are useful for expressing holo-phycobiliprotein-based constructs, useful in enzymology and chemistry of phycobiliprotein synthesis. The phycobiliproteins are useful as in vivo fluorescent protein probes.

Dwg.0/3

ACCESSION NUMBER: 2003-466144 [44] WPIDS
DOC. NO. NON-CPI: N2003-370782
DOC. NO. CPI: C2003-124291
TITLE: New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, useful for expressing a holo-phycobiliprotein fusion protein.
DERWENT CLASS: B04 D16 P13 S03
INVENTOR(S): CAI, Y; GLAZER, A N; TOOLEY, A J
PATENT ASSIGNEE(S): (CAIY-I) CAI Y; (GLAZ-I) GLAZER A N; (TOOL-I) TOOLEY A J; (REGC) UNIV CALIFORNIA
COUNTRY COUNT: 100
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2003027285	A1	20030206	(200344)*		13
WO 2003012448	A1	20030213	(200344)	EN	

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2003027285	A1	US 2001-919486	20010731
WO 2003012448	A1	WO 2002-US24245	20020730

PRIORITY APPLN. INFO: US 2001-919486 20010731

=> s bilin and phycobiliprotein fusion
L3 6 BILIN AND PHYCOBILIPROTEIN FUSION

=> d l3 ti abs ibib tot

L3 ANSWER 1 OF 6 USPATFULL on STN
TI Multifunctional recombinant phycobiliprotein-based fluorescent constructs and phycobilisome display
AB The invention provides multifunctional fusion constructs which are rapidly incorporated into a macromolecular structure such as a phycobilisome such that the fusion proteins are separated from one another and unable to self-associate. The invention provides methods and compositions for displaying a functional polypeptide domain on an oligomeric phycobiliprotein. including fusion proteins comprising a functional displayed domain and a functional phycobiliprotein domain incorporated in a functional oligomeric phycobiliprotein. The fusion

proteins provide novel specific labeling reagents.

ACCESSION NUMBER: 2004:18849 USPATFULL
TITLE: Multifunctional recombinant phycobiliprotein-based fluorescent constructs and phycobilisome display
INVENTOR(S): Glazer, Alexander N., Berkeley, CA, UNITED STATES
Cai, Yuping, Indianapolis, IN, UNITED STATES
PATENT ASSIGNEE(S): The Regents of the University of California (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004014151	A1	20040122
APPLICATION INFO.:	US 2003-617012	A1	20030710 (10)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1999-469194, filed on 21 Dec 1999, GRANTED, Pat. No. US 6649376
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: RICHARD ARON OSMAN, SCIENCE AND TECHNOLOGY LAW GROUP, 75 DENISE DRIVE, HILLSBOROUGH, CA, 94010
NUMBER OF CLAIMS: 22
EXEMPLARY CLAIM: 1
LINE COUNT: 3039

L3 ANSWER 2 OF 6 USPATFULL on STN
TI Multifunctional recombinant phycobiliprotein-based fluorescent constructs and phycobilisome display
AB The invention provides multifunctional fusion constructs which are rapidly incorporated into a macromolecular structure such as a phycobilisome such that the fusion proteins are separated from one another and unable to self-associate. The invention provides methods and compositions for displaying a functional polypeptide domain on an oligomeric phycobiliprotein, including fusion proteins comprising a functional displayed domain and a functional phycobiliprotein domain incorporated in a functional oligomeric phycobiliprotein. The fusion proteins provide novel specific labeling reagents.

ACCESSION NUMBER: 2004:13039 USPATFULL
TITLE: Multifunctional recombinant phycobiliprotein-based fluorescent constructs and phycobilisome display
INVENTOR(S): Glazer, Alexander N., Berkeley, CA, UNITED STATES
Cai, Yuping, Indianapolis, IN, UNITED STATES
PATENT ASSIGNEE(S): The Regents of the University of California (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004009559	A1	20040115
APPLICATION INFO.:	US 2003-617208	A1	20030710 (10)

RELATED APPLN. INFO.: Division of Ser. No. US 1999-469194, filed on 21 Dec 1999, GRANTED, Pat. No. US 6649376
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: RICHARD ARON OSMAN, SCIENCE AND TECHNOLOGY LAW GROUP, 75 DENISE DRIVE, HILLSBOROUGH, CA, 94010
NUMBER OF CLAIMS: 22
EXEMPLARY CLAIM: 1
LINE COUNT: 3017

L3 ANSWER 3 OF 6 USPATFULL on STN
TI Multifunctional recombinant phycobiliprotein-based fluorescent constructs and phycobilisome display
AB The invention provides multifunctional fusion constructs which are rapidly incorporated into a macromolecular structure such as a

phycobilisome such that the fusion proteins are separated from one another and unable to self-associate. The invention provides methods and compositions for displaying a functional polypeptide domain on an oligomeric phycobiliprotein, including fusion proteins comprising a functional displayed domain and a functional phycobiliprotein domain incorporated in a functional oligomeric phycobiliprotein. The fusion proteins provide novel specific labeling reagents.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER:	2003:302783 USPATFULL
TITLE:	Multifunctional recombinant phycobiliprotein-based fluorescent constructs and phycobilisome display
INVENTOR(S):	Glazer, Alexander N., Berkeley, CA, United States Cai, Yuping, Indianapolis, IN, United States
PATENT ASSIGNEE(S):	The Regents of the University of California, Oakland, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 6649376	B1	20031118	
APPLICATION INFO.:	US 1999-469194		19991221	(9)

DOCUMENT TYPE:	Utility
FILE SEGMENT:	GRANTED
PRIMARY EXAMINER:	Low, Christopher S. F.
ASSISTANT EXAMINER:	Kam, Chih-Min
LEGAL REPRESENTATIVE:	Osman, Richard Aron
NUMBER OF CLAIMS:	18
EXEMPLARY CLAIM:	1
NUMBER OF DRAWINGS:	0 Drawing Figure(s); 0 Drawing Page(s)
LINE COUNT:	2924

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 4 OF 6 USPATFULL on STN

TI Engineering of living cells for the expression of holo-phycobiliprotein-based constructs

AB Recombinant cells which express a fluorescent holo-**phycobiliprotein fusion** protein and methods of use are described. The cells comprises a **bilin**, a recombinant **bilin** reductase, an apo-**phycobiliprotein fusion** protein precursor of the fusion protein comprising a corresponding apo-phycobiliprotein domain, and a recombinant phycobiliprotein domain-**bilin** lyase, which components react to form the holo-**phycobiliprotein fusion** protein. Also described are holo-phycobiliprotein based transcription reporter cells and assays, which cells conditionally express a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER:	2003:37640 USPATFULL
TITLE:	Engineering of living cells for the expression of holo-phycobiliprotein-based constructs
INVENTOR(S):	Glazer, Alexander N., Berkeley, CA, UNITED STATES Tooley, Aaron J., Berkeley, CA, UNITED STATES Cai, Yuping, Carmel, IN, UNITED STATES

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2003027285	A1	20030206	
APPLICATION INFO.:	US 2001-919486	A1	20010731	(9)

DOCUMENT TYPE:	Utility
FILE SEGMENT:	APPLICATION
LEGAL REPRESENTATIVE:	RICHARD ARON OSMAN, SCIENCE AND TECHNOLOGY LAW GROUP, 75 DENISE DRIVE, HILLSBOROUGH, CA, 94010
NUMBER OF CLAIMS:	24

EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 918
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 5 OF 6 USPATFULL on STN
TI Recombinant phycobiliprotein and phycobiliprotein linker fusion proteins and uses therefore
AB This invention is directed to the utilization of the developing methods for molecular manipulation of cyanobacteria and red algae (and potentially cryptomonad algae) to express of phycobiliproteins and phycobiliprotein linker fusion proteins and their utilization as phycobiliprotein, phycobilisome and subassembly based reagents. In particular, the present invention relates to a method for a specific binding assay to determine a target moiety which is a member of a specific binding pair, and provides an improvement in the method comprising using a detectable label which is a fusion protein containing both a phycobiliprotein domain and another domain corresponding to a first member of a specific binding pair, where the fusion protein binds to a second member of the specific binding pair to provide a detectable labeled complex. The domain derived from the first member of the specific binding pair can be directly fused to the phycobiliprotein or phycobiliprotein linker domain or be separated by a spacer that allows correct folding of both domains.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 2001:237667 USPATFULL
TITLE: Recombinant phycobiliprotein and phycobiliprotein linker fusion proteins and uses therefore
INVENTOR(S): Allnutt, F.C. Thomas, Port Deposit, MD, United States
Toole, Colleen Mary, New Winson, MD, United States
Morseman, John Peter, Columbia, MD, United States

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2001055783	A1	20011227
APPLICATION INFO.:	US 2001-882093	A1	20010618 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-211784P	20000616 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: BROBECK, PHLEGER & HARRISON, LLP, ATTN: INTELLECTUAL PROPERTY DEPARTMENT, 1333 H STREET, N.W. SUITE 800, WASHINGTON, DC, 20005
NUMBER OF CLAIMS: 46
EXEMPLARY CLAIM: 1
LINE COUNT: 1218
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 6 OF 6 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
TI New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, useful for expressing a holo-**phycobiliprotein fusion** protein.
AN 2003-466144 [44] WPIDS
AB US2003027285 A UPAB: 20030710
NOVELTY - A recombinant cell expressing a holo-**phycobiliprotein fusion** protein comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, is new.
DETAILED DESCRIPTION - A recombinant cell expressing a holo-**phycobiliprotein fusion** protein comprising a

heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain. The cell makes and comprises components such as a **bilin**, a recombinant **bilin** reductase, an apo-**phycobiliprotein fusion** protein precursor of the fusion protein comprising a corresponding apo-phycobiliprotein domain, and a recombinant phycobiliprotein domain-**bilin** lyase, which components react inside the cell to form the holo-**phycobiliprotein fusion** protein.

An INDEPENDENT CLAIM is also included for making a holo-**phycobiliprotein fusion** protein by growing the cell under conditions where the cell expresses the holo-**phycobiliprotein fusion** protein.

USE - The cells are useful for expressing holo-phycobiliprotein-based constructs, useful in enzymology and chemistry of phycobiliprotein synthesis. The phycobiliproteins are useful as in vivo fluorescent protein probes.

Dwg.0/3

ACCESSION NUMBER: 2003-466144 [44] WPIDS
DOC. NO. NON-CPI: N2003-370782
DOC. NO. CPI: C2003-124291
TITLE: New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, useful for expressing a holo-**phycobiliprotein fusion** protein.
DERWENT CLASS: B04 D16 P13 S03
INVENTOR(S): CAI, Y; GLAZER, A N; TOOLEY, A J
PATENT ASSIGNEE(S): (CAIY-I) CAI Y; (GLAZ-I) GLAZER A N; (TOOL-I) TOOLEY A J; (REGC) UNIV CALIFORNIA
COUNTRY COUNT: 100
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2003027285	A1	20030206	(200344)*		13
WO 2003012448	A1	20030213	(200344)	EN	

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2003027285	A1	US 2001-919486	20010731
WO 2003012448	A1	WO 2002-US24245	20020730

PRIORITY APPLN. INFO: US 2001-919486 20010731

=> d his

(FILE 'HOME' ENTERED AT 15:39:14 ON 02 FEB 2004)

FILE 'MEDLINE, USPATFULL, DGENE, EMBASE, WPIDS, FSTA, BIOSIS' ENTERED AT 15:39:39 ON 02 FEB 2004
L1 2 S (HOLO-PHYCOBILIPROTEIN)
L2 2 S (APO-PHYCOBILIPROTEIN)
L3 6 S BILIN AND PHYCOBILIPROTEIN FUSION

```
=> s l1 and bilin reductase
L4            2 L1 AND BILIN REDUCTASE

=> s l2 and HO1
L5            2 L2 AND HO1

=> s HO1
L6          441 HO1

=> s l6 and phycobiliprotein
L7            4 L6 AND PHYCOBILIPROTEIN

=> d l7 ti abs ibib tot

L7   ANSWER 1 OF 4  USPATFULL on STN
TI     HY2 family of bilin reductases
AB     This invention identifies a novel family of bilin reductases. Designated
       herein HY bilin reductases, the enzymes of this invention are useful in
       a wide variety of contexts including but not limited to the conversion
       of biliverdins to phytobilins and the assembly of holophytochromes or
       phytofluors.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER:         2003:152713  USPATFULL
TITLE:                    HY2 family of bilin reductases
INVENTOR(S):              Lagarias, John Clark, Davis, CA, UNITED STATES
                          Kochi, Takayuki, Ikoma, JAPAN
                          Frankenberg, Nicole, Davis, CA, UNITED STATES
                          Gambetta, Gregory A., Davis, CA, UNITED STATES
                          Montgomery, Beronda L., Bloomington, IN, UNITED STATES
PATENT ASSIGNEE(S):       The Regents of the University of California (U.S.
                          corporation)

                               NUMBER         KIND    DATE
                          ---------------- ------ --------
PATENT INFORMATION:       US 2003104379      A1   20030605
APPLICATION INFO.:        US 2001-870406     A1   20010529  (9)

                                 NUMBER         DATE
                          ------------------ --------
PRIORITY INFORMATION:     US 2001-271758P    20010226 (60)
                          US 2000-210286P    20000608 (60)
DOCUMENT TYPE:            Utility
FILE SEGMENT:             APPLICATION
LEGAL REPRESENTATIVE:     QUINE INTELLECTUAL PROPERTY LAW GROUP, P.C., P O BOX
                          458, ALAMEDA, CA, 94501
NUMBER OF CLAIMS:         79
EXEMPLARY CLAIM:          1
NUMBER OF DRAWINGS:       23 Drawing Page(s)
LINE COUNT:               4474
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7   ANSWER 2 OF 4  USPATFULL on STN
TI     Light controlled gene expression utilizing heterologous phytochromes
AB     This invention relates to the field of gene expression. In particular
       this invention relates to the use of heterologous phytochromes to
       translocate polypeptides into the nucleus of a cell. Where the
       polypeptides comprise transactivators or repressors this invention
       provides a system for light-directed gene expression.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER:         2003:106324  USPATFULL
TITLE:                    Light controlled gene expression utilizing heterologous
                          phytochromes
```

INVENTOR(S): Lagarias, John Clark, Davis, CA, UNITED STATES
Kochi, Takayuki, Daigakusyuku sya, JAPAN
Frankenberg, Nicole, Davis, CA, UNITED STATES
Gambetta, Gregory A., Davis, CA, UNITED STATES
Montgomery, Beronda L., Bloomington, IN, UNITED STATES
PATENT ASSIGNEE(S): The Regents of the University of California (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003073235	A1	20030417
APPLICATION INFO.:	US 2002-159901	A1	20020529 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-294463P	20010529 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: QUINE INTELLECTUAL PROPERTY LAW GROUP, P.C., P O BOX 458, ALAMEDA, CA, 94501
NUMBER OF CLAIMS: 14
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 20 Drawing Page(s)
LINE COUNT: 4485
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 3 OF 4 USPATFULL on STN
TI Engineering of living cells for the expression of holo-**phycobiliprotein**-based constructs
AB Recombinant cells which express a fluorescent holo-**phycobiliprotein** fusion protein and methods of use are described. The cells comprises a bilin, a recombinant bilin reductase, an apo-**phycobiliprotein** fusion protein precursor of the fusion protein comprising a corresponding apo-**phycobiliprotein** domain, and a recombinant **phycobiliprotein** domain-bilin lyase, which components react to form the holo-**phycobiliprotein** fusion protein. Also described are holo-**phycobiliprotein** based transcription reporter cells and assays, which cells conditionally express a heterologous-to-the-cell, fluorescent, first holo-**phycobiliprotein** domain.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 2003:37640 USPATFULL
TITLE: Engineering of living cells for the expression of holo-**phycobiliprotein**-based constructs
INVENTOR(S): Glazer, Alexander N., Berkeley, CA, UNITED STATES
Tooley, Aaron J., Berkeley, CA, UNITED STATES
Cai, Yuping, Carmel, IN, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003027285	A1	20030206
APPLICATION INFO.:	US 2001-919486	A1	20010731 (9)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: RICHARD ARON OSMAN, SCIENCE AND TECHNOLOGY LAW GROUP, 75 DENISE DRIVE, HILLSBOROUGH, CA, 94010
NUMBER OF CLAIMS: 24
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 918
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 4 OF 4 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

TI New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-**phycobiliprotein** domain fused a heterologous protein domain, useful for expressing a holo-**phycobiliprotein** fusion protein.

AN 2003-466144 [44] WPIDS

AB US2003027285 A UPAB: 20030710

NOVELTY - A recombinant cell expressing a holo-**phycobiliprotein** fusion protein comprising a heterologous-to-the-cell, fluorescent, first holo-**phycobiliprotein** domain fused a heterologous protein domain, is new.

DETAILED DESCRIPTION - A recombinant cell expressing a holo-**phycobiliprotein** fusion protein comprising a heterologous-to-the-cell, fluorescent, first holo-**phycobiliprotein** domain fused a heterologous protein domain. The cell makes and comprises components such as a bilin, a recombinant bilin reductase, an apo-**phycobiliprotein** fusion protein precursor of the fusion protein comprising a corresponding apo-**phycobiliprotein** domain, and a recombinant **phycobiliprotein** domain-bilin lyase, which components react inside the cell to form the holo-**phycobiliprotein** fusion protein.

An INDEPENDENT CLAIM is also included for making a holo-**phycobiliprotein** fusion protein by growing the cell under conditions where the cell expresses the holo-**phycobiliprotein** fusion protein.

USE - The cells are useful for expressing holo-**phycobiliprotein**-based constructs, useful in enzymology and chemistry of **phycobiliprotein** synthesis. The phycobiliproteins are useful as in vivo fluorescent protein probes.

Dwg.0/3

ACCESSION NUMBER: 2003-466144 [44] WPIDS
DOC. NO. NON-CPI: N2003-370782
DOC. NO. CPI: C2003-124291
TITLE: New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-**phycobiliprotein** domain fused a heterologous protein domain, useful for expressing a holo-**phycobiliprotein** fusion protein.
DERWENT CLASS: B04 D16 P13 S03
INVENTOR(S): CAI, Y; GLAZER, A N; TOOLEY, A J
PATENT ASSIGNEE(S): (CAIY-I) CAI Y; (GLAZ-I) GLAZER A N; (TOOL-I) TOOLEY A J; (REGC) UNIV CALIFORNIA
COUNTRY COUNT: 100
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2003027285	A1	20030206	(200344)*		13
WO 2003012448	A1	20030213	(200344)	EN	

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2003027285	A1	US 2001-919486	20010731
WO 2003012448	A1	WO 2002-US24245	20020730

PRIORITY APPLN. INFO: US 2001-919486 20010731

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=> s PCB
L8        78751 PCB

=> S PcyA
L9           26 PCYA

=> s PecE or PecF
L10        1032 PECE OR PECF

=> s l10 and l9
L11           2 L10 AND L9

=> s l8 and l9
L12          12 L8 AND L9

=> s l12 and l10
L13           2 L12 AND L10

=> d l13 ti abs ibib tot

L13  ANSWER 1 OF 2  USPATFULL on STN
TI     Engineering of living cells for the expression of holo-phycobiliprotein-
       based constructs
AB     Recombinant cells which express a fluorescent holo-phycobiliprotein
       fusion protein and methods of use are described. The cells comprises a
       bilin, a recombinant bilin reductase, an apo-phycobiliprotein fusion
       protein precursor of the fusion protein comprising a corresponding
       apo-phycobiliprotein domain, and a recombinant phycobiliprotein
       domain-bilin lyase, which components react to form the
       holo-phycobiliprotein fusion protein. Also described are
       holo-phycobiliprotein based transcription reporter cells and assays,
       which cells conditionally express a heterologous-to-the-cell,
       fluorescent, first holo-phycobiliprotein domain.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER:        2003:37640  USPATFULL
TITLE:                   Engineering of living cells for the expression of
                         holo-phycobiliprotein-based constructs
INVENTOR(S):             Glazer, Alexander N., Berkeley, CA, UNITED STATES
                         Tooley, Aaron J., Berkeley, CA, UNITED STATES
                         Cai, Yuping, Carmel, IN, UNITED STATES

                              NUMBER        KIND    DATE
                         ---------------- ------ --------
PATENT INFORMATION:      US 2003027285      A1   20030206
APPLICATION INFO.:       US 2001-919486     A1   20010731  (9)
DOCUMENT TYPE:           Utility
FILE SEGMENT:            APPLICATION
LEGAL REPRESENTATIVE:    RICHARD ARON OSMAN, SCIENCE AND TECHNOLOGY LAW GROUP,
                         75 DENISE DRIVE, HILLSBOROUGH, CA, 94010
NUMBER OF CLAIMS:        24
EXEMPLARY CLAIM:         1
NUMBER OF DRAWINGS:      3 Drawing Page(s)
LINE COUNT:              918
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L13  ANSWER 2 OF 2  WPIDS  COPYRIGHT 2004 THOMSON DERWENT on STN
TI   New recombinant cell comprising a heterologous-to-the-cell, fluorescent,
     first holo-phycobiliprotein domain fused a heterologous protein domain,
     useful for expressing a holo-phycobiliprotein fusion protein.
AN   2003-466144 [44]   WPIDS
AB   US2003027285 A UPAB: 20030710
     NOVELTY - A recombinant cell expressing a holo-phycobiliprotein fusion
```

protein comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, is new.

DETAILED DESCRIPTION - A recombinant cell expressing a holo-phycobiliprotein fusion protein comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain. The cell makes and comprises components such as a bilin, a recombinant bilin reductase, an apo-phycobiliprotein fusion protein precursor of the fusion protein comprising a corresponding apo-phycobiliprotein domain, and a recombinant phycobiliprotein domain-bilin lyase, which components react inside the cell to form the holo-phycobiliprotein fusion protein.

An INDEPENDENT CLAIM is also included for making a holo-phycobiliprotein fusion protein by growing the cell under conditions where the cell expresses the holo-phycobiliprotein fusion protein.

USE - The cells are useful for expressing holo-phycobiliprotein-based constructs, useful in enzymology and chemistry of phycobiliprotein synthesis. The phycobiliproteins are useful as in vivo fluorescent protein probes.

Dwg.0/3

ACCESSION NUMBER: 2003-466144 [44] WPIDS
DOC. NO. NON-CPI: N2003-370782
DOC. NO. CPI: C2003-124291
TITLE: New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, useful for expressing a holo-phycobiliprotein fusion protein.
DERWENT CLASS: B04 D16 P13 S03
INVENTOR(S): CAI, Y; GLAZER, A N; TOOLEY, A J
PATENT ASSIGNEE(S): (CAIY-I) CAI Y; (GLAZ-I) GLAZER A N; (TOOL-I) TOOLEY A J; (REGC) UNIV CALIFORNIA
COUNTRY COUNT: 100
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2003027285	A1	20030206	(200344)*		13
WO 2003012448	A1	20030213	(200344)	EN	

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2003027285	A1	US 2001-919486	20010731
WO 2003012448	A1	WO 2002-US24245	20020730

PRIORITY APPLN. INFO: US 2001-919486 20010731

```
=> s PEB
L14        2404 PEB

=> s l14 and l12
L15           5 L14 AND L12

=> d l15 ti abs ibib tot

L15  ANSWER 1 OF 5  USPATFULL on STN
```

TI HY2 family of bilin reductases
AB This invention identifies a novel family of bilin reductases. Designated herein HY bilin reductases, the enzymes of this invention are useful in a wide variety of contexts including but not limited to the conversion of biliverdins to phytobilins and the assembly of holophytochromes or phytofluors.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER:	2003:152713 USPATFULL
TITLE:	HY2 family of bilin reductases
INVENTOR(S):	Lagarias, John Clark, Davis, CA, UNITED STATES Kochi, Takayuki, Ikoma, JAPAN Frankenberg, Nicole, Davis, CA, UNITED STATES Gambetta, Gregory A., Davis, CA, UNITED STATES Montgomery, Beronda L., Bloomington, IN, UNITED STATES
PATENT ASSIGNEE(S):	The Regents of the University of California (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2003104379	A1	20030605	
APPLICATION INFO.:	US 2001-870406	A1	20010529	(9)

	NUMBER	DATE	
PRIORITY INFORMATION:	US 2001-271758P	20010226	(60)
	US 2000-210286P	20000608	(60)

DOCUMENT TYPE:	Utility
FILE SEGMENT:	APPLICATION
LEGAL REPRESENTATIVE:	QUINE INTELLECTUAL PROPERTY LAW GROUP, P.C., P O BOX 458, ALAMEDA, CA, 94501
NUMBER OF CLAIMS:	79
EXEMPLARY CLAIM:	1
NUMBER OF DRAWINGS:	23 Drawing Page(s)
LINE COUNT:	4474

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 2 OF 5 USPATFULL on STN
TI Light controlled gene expression utilizing heterologous phytochromes
AB This invention relates to the field of gene expression. In particular this invention relates to the use of heterologous phytochromes to translocate polypeptides into the nucleus of a cell. Where the polypeptides comprise transactivators or repressors this invention provides a system for light-directed gene expression.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER:	2003:106324 USPATFULL
TITLE:	Light controlled gene expression utilizing heterologous phytochromes
INVENTOR(S):	Lagarias, John Clark, Davis, CA, UNITED STATES Kochi, Takayuki, Daigakusyuku sya, JAPAN Frankenberg, Nicole, Davis, CA, UNITED STATES Gambetta, Gregory A., Davis, CA, UNITED STATES Montgomery, Beronda L., Bloomington, IN, UNITED STATES
PATENT ASSIGNEE(S):	The Regents of the University of California (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2003073235	A1	20030417	
APPLICATION INFO.:	US 2002-159901	A1	20020529	(10)

	NUMBER	DATE

PRIORITY INFORMATION: US 2001-294463P 20010529 (60)
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: QUINE INTELLECTUAL PROPERTY LAW GROUP, P.C., P O BOX 458, ALAMEDA, CA, 94501
NUMBER OF CLAIMS: 14
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 20 Drawing Page(s)
LINE COUNT: 4485
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 3 OF 5 USPATFULL on STN
TI Engineering of living cells for the expression of holo-phycobiliprotein-based constructs
AB Recombinant cells which express a fluorescent holo-phycobiliprotein fusion protein and methods of use are described. The cells comprises a bilin, a recombinant bilin reductase, an apo-phycobiliprotein fusion protein precursor of the fusion protein comprising a corresponding apo-phycobiliprotein domain, and a recombinant phycobiliprotein domain-bilin lyase, which components react to form the holo-phycobiliprotein fusion protein. Also described are holo-phycobiliprotein based transcription reporter cells and assays, which cells conditionally express a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 2003:37640 USPATFULL
TITLE: Engineering of living cells for the expression of holo-phycobiliprotein-based constructs
INVENTOR(S): Glazer, Alexander N., Berkeley, CA, UNITED STATES
Tooley, Aaron J., Berkeley, CA, UNITED STATES
Cai, Yuping, Carmel, IN, UNITED STATES

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2003027285	A1	20030206	
APPLICATION INFO.:	US 2001-919486	A1	20010731	(9)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: RICHARD ARON OSMAN, SCIENCE AND TECHNOLOGY LAW GROUP, 75 DENISE DRIVE, HILLSBOROUGH, CA, 94010
NUMBER OF CLAIMS: 24
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 918
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 4 OF 5 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
TI New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, useful for expressing a holo-phycobiliprotein fusion protein.
AN 2003-466144 [44] WPIDS
AB US2003027285 A UPAB: 20030710
NOVELTY - A recombinant cell expressing a holo-phycobiliprotein fusion protein comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, is new.
DETAILED DESCRIPTION - A recombinant cell expressing a holo-phycobiliprotein fusion protein comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain. The cell makes and comprises components such as a bilin, a recombinant bilin reductase, an apo-phycobiliprotein fusion protein precursor of the fusion protein comprising a corresponding apo-phycobiliprotein domain, and a recombinant phycobiliprotein domain-bilin lyase, which components react inside the cell to form the

holo-phycobiliprotein fusion protein.

An INDEPENDENT CLAIM is also included for making a holo-phycobiliprotein fusion protein by growing the cell under conditions where the cell expresses the holo-phycobiliprotein fusion protein.

USE - The cells are useful for expressing holo-phycobiliprotein-based constructs, useful in enzymology and chemistry of phycobiliprotein synthesis. The phycobiliproteins are useful as in vivo fluorescent protein probes.

Dwg.0/3

ACCESSION NUMBER: 2003-466144 [44] WPIDS
DOC. NO. NON-CPI: N2003-370782
DOC. NO. CPI: C2003-124291
TITLE: New recombinant cell comprising a heterologous-to-the-cell, fluorescent, first holo-phycobiliprotein domain fused a heterologous protein domain, useful for expressing a holo-phycobiliprotein fusion protein.
DERWENT CLASS: B04 D16 P13 S03
INVENTOR(S): CAI, Y; GLAZER, A N; TOOLEY, A J
PATENT ASSIGNEE(S): (CAIY-I) CAI Y; (GLAZ-I) GLAZER A N; (TOOL-I) TOOLEY A J; (REGC) UNIV CALIFORNIA
COUNTRY COUNT: 100
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2003027285	A1	20030206	(200344)*		13
WO 2003012448	A1	20030213	(200344)	EN	

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2003027285	A1	US 2001-919486	20010731
WO 2003012448	A1	WO 2002-US24245	20020730

PRIORITY APPLN. INFO: US 2001-919486 20010731

L15 ANSWER 5 OF 5 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel isolated HY2 family bilin reductase having bilin reductase activity, useful for converting biliverdin to phytobilin, and for producing a photoactive holophytochrome and/or phytofluors.
AN 2002-195566 [25] WPIDS
AB WO 200194548 A UPAB: 20030703

NOVELTY - An isolated HY2 family bilin reductase (I) comprising an amino acid consensus sequence as given in specification and having bilin reductase activity, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a nucleic acid (II) encoding (I);

(2) a cell (III) comprising a heterologous nucleic acid comprising (II);

(3) a nucleic acid (IV) comprising a nucleic acid that specifically hybridizes with (II) under stringent conditions and that encodes a polypeptide having bilin reductase activity, where the nucleic acid does not encode an hvrccr or an atrccr polypeptide;

(4) a cell (V) comprising a heme oxygenase; an apophytochrome; and a ferredoxin-dependent bilin reductase; where the cell produces a

photoactive holophytochrome and where one or more of the apophytochrome and the ferredoxin-dependent bilin reductase are expressed by heterologous nucleic acids; and

(5) recombinant nucleic acid (VI) comprising a nucleic acid encoding a functional heme oxidoreductase; and a nucleic acid encoding a functional ferrodoxin-dependent bilin reductase.

USE - (I) (a ycp2snpy or ycp3snpy) is useful for converting biliverdin to phytobilin where the bilin reductase is cyanobacterial, algal, or plant bilin reductase which is recombinantly expressed. The bilin reductase is contacted with biliverdin ex vivo, or in a cell where the bilin reductase is a heterologous polypeptide. The method further involves contacting the phytochromobilin with a second bilin reductase such as PeebB to produce a phytochrome or phytofluor. (II) is useful for detecting expression of a polypeptide which involves providing a cell comprising a nucleic acid encoding an apophytochrome; and (II) encoding a bilin reductase that produces a phytobilin that assembles with the apophytochrome to produce a phytofluor; and detecting an optical signal produced by the phytofluor. (I) in combination with other enzymes is useful for producing photoactive holophytochrome which involves co-expressing in a cell: a heme oxygenase an apophytochrome; and a ferredoxin-dependent bilin reductase; whereby the cell produces the photoactive holophytochrome and where one or more of the apophytochrome and the ferredoxin-dependent bilin reductase are expressed by heterologous nucleic acids. Preferably, a photoactive holophtochrome that is not a phytofluor, is produced by coexpressing hemoxygenase, an apophytochrome, and ferredoxin-dependent bilin reductase such as HY2 family bilin reductase (e.g., HY2 or **pcyA**) in an algal, plant, yeast, bacterial, insect or mammalian cell . Preferably, all the three components are expressed by a heterologous nucleic acids. Optionally, a photoactive holophytochrome that is a phytofluor is produced, where the apophytochrome is expressed as a fusion protein with a protein that is to be labeled with the phytofluor. The method preferably involves expressing ferredoxin-dependent bilin reductase pebA and/or pebB in a bacterial cell. The method further involves recovering the photoactive holophytochrome from the cell (all claimed).

The availability of genes for bilin reductases that mediate the biosynthesis of phytochromobilin, phytocyanobilin (**PCB**), and phycoerythrobilin (**PEB**) provides the ability to engineer the biosynthesis of **PEB** in any biliverdin (BV)-producing organisms. Thus, phytofluors potentially can be produced in any ferredoxin-containing organisms. By introducing the **pcyA** gene into wild-type and chromophore-deficient mutant plants the wavelength specificity of phytochrome could also be changed which may favorably alter plant growth and development in the field environment. Introduction of the pebA and pebB genes into plants potentially will shunt the conversion of BV to **PEB**, yielding photomorphogenetically challenged plants with fluorescent phytochromes. This would be especially useful for the analysis of the temporal and spatial patterns of phytochrome expression in plants.

DESCRIPTION OF DRAWING(S) - The figure shows phytochrome biosynthesis in Arabidopsis

Dwg.2/16

ACCESSION NUMBER: 2002-195566 [25] WPIDS
DOC. NO. CPI: C2002-060370
TITLE: Novel isolated HY2 family bilin reductase having bilin reductase activity, useful for converting biliverdin to phytobilin, and for producing a photoactive holophytochrome and/or phytofluors.
DERWENT CLASS: B04 D16
INVENTOR(S): FRANKENBERG, N; GAMBETTA, G A; KOCHI, T; LAGARIAS, J C; MONTGOMERY, B L
PATENT ASSIGNEE(S): (REGC) UNIV CALIFORNIA
COUNTRY COUNT: 23
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001094548	A2	20011213	(200225)*	EN	102
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR					
W: CA JP					
EP 1290135	A2	20030312	(200320)	EN	
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR					
US 2003104379	A1	20030605	(200339)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001094548	A2	WO 2001-US18326	20010605
EP 1290135	A2	EP 2001-942007	20010605
		WO 2001-US18326	20010605
US 2003104379	A1 Provisional	US 2000-210286P	20000608
	Provisional	US 2001-271758P	20010226
		US 2001-870406	20010529

FILING DETAILS:

PATENT NO	KIND	PATENT NO
EP 1290135	A2 Based on	WO 2001094548

PRIORITY APPLN. INFO: US 2001-870406 20010529; US 2000-210286P 20000608; US 2001-271758P 20010226

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Search Results -

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Search: L7

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DATE: Monday, February 02, 2004 Printable Copy Create Case

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DB=USPT; PLUR=YES; OP=OR			
L7	CpcE and L6	1	L7
L6	PCB and L5	81	L6
L5	Phytochrome domain and L4	18429	L5
L4	l1 and domain	18324	L4
L3	cell and L2	37012	L3
L2	apo-phycobiliprotein fusion	76513	L2
L1	holo-phycobiliprotein fusion	76513	L1

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☐ 1. Document ID: US 6649376 B1

L7: Entry 1 of 1 File: USPT Nov 18, 2003

US-PAT-NO: 6649376
DOCUMENT-IDENTIFIER: US 6649376 B1

TITLE: Multifunctional recombinant phycobiliprotein-based fluorescent constructs and phycobilisome display

DATE-ISSUED: November 18, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Glazer; Alexander N.	Berkeley	CA		
Cai; Yuping	Indianapolis	IN		

US-CL-CURRENT: 435/69.7; 435/183, 435/252.1, 435/320.1, 435/69.1, 435/7.7, 435/822, 436/501, 436/519, 436/536, 436/63, 530/350, 536/23.1

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